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ABSTRACT

From a questionnaire given to five practicing school psychologists, the author gathered data about the incidence of reading retardation in cases referred to school psychologists. The cases included 96 students from three New Jersey school districts, one California school district, and one Tennessee school district. Approximately 69 percent of the cases exhibited reading retardation as evidenced by an actual reading level below their chronological and mental age group. In only 33 percent of the cases was reading retardation mentioned in the referral of the student to the school psychologist. The cases with reading retardation were predominated by males, the age group 9 to 11, grades K to 3, Caucasians, middle socioeconomic status, and within an 81 to 100 IQ range. Of those students referred, only 23 percent had previously had remedial reading instruction, 1 percent were referred by remedial reading personnel, and 81 percent were referred by classroom teachers. Further research is suggested in light of the large incidence of reading retardation in such cases and in light of the low percentage of cases in which reading retardation was mentioned in the referral. Tables, the sample questionnaire, and a bibliography are included. (AL)

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THE INCIDENCE OF READING RETARDATION IN CASES REFERRED TO SCHOOL PSYCHOLOGISTS

A THESIS

SUBMITTED TO THE FACULTY

OF THE GRADUATE SCHOOL OF EDUCATION

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ABSTRACT

The present study was designed to investigate the incidence of reading retardation in cases referred to school psychologists and the percentage of cases that specifically mentioned this reading retardation in the referral. Also sought was how the cases in the above categories were distributed according to sex, age, grade, race, socioeconomic status, and IQ; the percentage of cases referred that had had remedial-reading instruction; and the percentage of cases referred from remedial-reading personnel.

The general plan was to survey selected school psychologists and Directors of Special Services to collect data on cases referred to them between March 22-May 1, 1971. A referral questionnaire, completed on each case collected from these sources, provided the basis for the data tabulation.

The selected school psychologists were five functioning school psychologists enrolled in the Rutgers University School Psychology Internship Program during the Spring 1971 school year; three Directors of Special Services also provided referral data. These eight collection sources represented school districts in New Jersey, Tennessee, and California, and provided a total of 96 cases.

Thirty-two of 96 cases (33-1/3%) referred had reading retardation specifically mentioned in the referral. Ninety-six percent of the reading mentioned cases were reading below CAGP, 100% were reading below MAGP, and 96% were reading below both CAGP and MAGP. Seventy-five percent of the cases without reading mentioned were reading below CAGP, 65% were reading below MAGP, and 55% were reading below both CAGP and MAGP. The proportion of cases below/not below CAGP, MAGP, and both was significantly different in the reading mentioned/not mentioned categories ($p < .05$, .001, and .001, respectively).

Sixty-five of the determinable 79 cases (82%) referred exhibited reading retardation as evidenced by an actual reading level below their CAGP.

Fifty-seven of the determinable 74 cases (77%) referred exhibited reading retardation as evidenced by an actual reading level below their MAGP.

Fifty-one of the determinable 74 cases (69%) referred exhibited reading retardation as evidenced by an actual reading level below both their CAGP and MAGP. A significant difference in the proportion of those below/not below MAGP was found in the below/not below CAGP categories ($p < .001$) and in the proportion of those below/not below both CAGP and MAGP in the below/not below CAGP categories and in the below/not below MAGP categories ($p < .001$).

The distribution of sex, age, grade, race, socioeconomic status, and IQ within the above categories revealed a predominance of males, ages 5-11 (more specifically 9-11), grades K-6 (more specifically K-3), Caucasians, the middle socioeconomic status group, and the 81-120 (more specifically 81-100) IQ range.

Eighteen of the determinable 79 cases (23%) referred had previously attended remedial-reading instruction.

One of the 96 cases (1%) was referred by remedial-reading personnel; 78 (81%) were referred by the classroom teacher.

It was concluded that there was a large incidence of reading retardation among cases referred to school psychologists; that reading was not usually mentioned in the referral even though the incidence of reading retardation was so high; that boys, primary ages and grades, Caucasians, middle SES, and the dull normal IQ range dominated the categories of referrals; that relatively few referrals had had previous remedial-reading instruction; and that remedial-reading personnel were not a major referral source. Therefore, it was suggested that the reading-retardation problem in school psychologist referrals be further investigated, particularly since so many without reading mentioned were reading retardates, so many cases were actually below CAGP, MAGP, or both, and so many were in the age/grade groups which concentrate on reading development.

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CHAPTER I

INTRODUCTION

Diagnosis of reading problems and the determination of the proper methods for their remediation are processes that involve the classroom teacher; the remedial-reading teacher; and, at times, the school psychologist. Classroom teachers will sometimes seek the services of the school psychologist in order to investigate the causes of learning difficulties, some of which may be inadequate reading, of particular students in their classes. Remedial-reading personnel similarly seek the assistance of the school psychologist in reading-retardation cases that appear to have psychological or emotional problems associated with them. There are also times when the school psychologist is referred cases that are not labeled reading-problem cases but that are later shown to have reading problems which often may be associated with the original referred cause; e.g., delinquent behavior and inability to learn. The school psychologist then often becomes a link in the chain of personnel who attempt to determine why a child cannot read and what can be done to help him.

The overall plan of this survey study was to

investigate this reading-retardation factor as a specifically mentioned or unmentioned but exhibited characteristic of cases referred to school psychologists.

Statement of the Problem

The purpose of this study was to survey selected school psychologists in New Jersey, Tennessee, and California to determine the percentage of cases referred to them who were retarded readers. The survey sought specifically to answer the following questions:

1. What percentage of cases referred to school psychologists specifically mentioned reading retardation in the oral and/or written referral?

2. What percentage of cases referred to school psychologists exhibit reading retardation as evidenced by an actual reading level below the average for pupils at their age levels?

3. What percentage of cases referred to school psychologists exhibit reading retardation as evidenced by an actual reading level below the average for pupils at their mental-age levels?

4. How are the cases in the above categories distributed according to sex, age, grade, race, socioeconomic status (SES), and IQ?

5. What percentage of cases referred to school psychologists have had remedial-reading instruction?

6. What percentage of cases referred to school psychologists were referred by remedial-reading personnel?

Importance of the Study

The role of the school psychologist in the reading-retardation problem should be dictated by the extent to which his cases reflect this factor. If the majority of referrals exhibit reading retardation, this role should acquire the importance and seriousness that Fuller (1964) described when he stated:

> Reading disability is one of the primary problems to be coped with in the educational field today. Because reading is so important in the emotional and educational development of children, there is widespread concern for the child manifesting a reading disability. For psychologists, this concern must be directed toward establishing a more critical definition of the problem and toward developing effective objective instruments to aid in differential diagnosis [p. 314].

Definition of Terms

Reading problem is used synonomously with the terms reading retardation and reading disability in this study, and is based on expectancy defined by chronological age, mental age, or both.

Chronological age grade placement (CAGP) is grade placement commensurate with chronological age; in this study it is compared to the reading level to determine a type of reading retardation.

Mental age grade placement (MAGP) is grade placement

commensurate with mental age; in this study it is compared to the reading level to determine another type of reading retardation.

School psychologist. "A psychologist with training and experience in education. He uses his specialized knowledge of assessment, learning, and interpersonal relationships to assist school personnel to enrich the experience and growth of all children, and to recognize and deal with exceptional children [Cutts, 1955, p. 30]."

CHAPTER II

SURVEY OF THE LITERATURE

This chapter will review the limited number of published survey studies that have investigated the nature and characteristics of cases referred to school psychologists. Although most studies that were found did not deal exclusively with the reading-retardation problem in cases referred to school psychologists or their child guidance counterparts, those available studies do consider the role of academic underachievement or learning problems in the referrals they analyze. Some representative studies that deal with reading achievement and sex differences, socio-economic status, and race differences will also be included since these variables will be considered in the data analysis.

Cases Referred for Psychological and/or Guidance Services

An investigation of the reading disability problem and psychological referrals was conducted by Ellis (1949). In checking the files for 1945-1948 of the New Jersey Mental Hygiene Clinic (a clinic that assumed a school psychologist role by dealing with reading disability diagnosis and

remediation as a part of its overall psychological examination), he found that 233 cases of reading disability (total case load unspecified) had been diagnosed and treated. Of this case load, 100 cases contained both an original diagnosis and a one-year subsequent psychological examination which included a follow-up reading test.

Ellis analyzed these reading disability cases further by computing their reading gains/losses over that one-year period of casework (range, 0-2.4 years; mean, .7 years; median, .6 years), the amount of original reading retardation (range, 0-4.2 years; mean, 1.6 years; median, 1.5 years), the age at the time reading disability was diagnosed (range, 7-14; mean, 9; median, 9), and the term reached in school at the time reading disability was diagnosed (range, 1-7; mean, 3.6; median, 3). The average child diagnosed by the clinic, according to Ellis' data, was a year and a half retarded in reading, 9 years old, in the third grade, one year retarded in school, had average intelligence, was mildly emotionally disturbed, and was doing unsatisfactory work in school. After one year of casework (social worker assistance and remedial tutoring) this average child experienced a reading gain of more than half a year.

Ellis also correlated the amount of reading gain with other stipulated variables. He found significant

correlations between the amount of reading gain and the amount and quality of remedial tutoring (.62, $p < .01$), the intelligence ratings of the subjects (.46, $p < .01$), the severity of the psychiatric diagnosis (-.33, $p < .01$), and the age at the time the reading disability was diagnosed (.27, $p < .01$). He concluded that reading gains increased as the amount and quality of remedial tutoring increased, as the intelligence of the subject increased, and as the age at the time of diagnosis of reading disability increased. Inversely, the amount of reading gain decreased as the severity of the emotional disturbance increased. Ellis further concluded that both educational and emotional factors seemed to have vital importance in the etiology of reading-disability cases, and that a combined educational-emotional remediation program is most effective in alleviating the problem.

Gilbert (1957) surveyed referral problems in two child guidance centers and two educational clinics in selected metropolitan areas in the United States. He examined 2,500 cases referred to guidance centers in Detroit and Philadelphia and in educational clinics in New York and Chicago during 1954. He found that academic difficulty was most often stated as the reason for referral (45%) in the cases analyzed. Academic difficulty was given as the reason for referral in 56% of the educational

clinics, but in only 27% of the child guidance clinics. Boys were referred with more than twice the incidence of girls within all clinics, for all reasons, and in all age groups. The age group 6-10 dominated the case-load sample in all categories, with the age group 10-14 also accounting for a substantial share. Table 1 summarizes the referral problems according to reason for referral, sex, and age within each type of clinic.

Rice (1963) investigated referral problems at different grade levels to find out if children were referred for different reasons at different developmental levels. He studied 283 cases referred to a central guidance agency from a school district population of 9,000 in grades 1-12. Academic underachievement and low ability were two subareas included under the Intellectual Disabilities category and computation of the chi-square revealed a significantly different proportion of children referred for intellectual disabilities at different grade levels ($p < .01$), due primarily to the high number of primary children referred for intellectual problems. Primary and intermediate pupils were shown to be largely referred for intellectual problems involving underachieving and low ability. Junior high students had a significant proportion referred for moral and social problems, and hence they accounted for the significant differences in the moral defect ($p < .01$)

TABLE 1

COMPOSITE DISTRIBUTION OF "REFERRAL PROBLEMS" IN FOUR METROPOLITAN CHILD GUIDANCE CENTERS
(N = 2,500 CHILDREN; AVERAGE 1.9 COMPLAINTS PER CHILD)

Referral problems	Under 6		6 to 10		10 to 14		14 to 18		All ages			Total as % of N	Percent of all cases in 2 community clinics	Percent of all cases in 2 school clinics
	M	F	M	F	M	F	M	F	M	F	Total			
Academic Difficulties	3	0	358	126	322	117	146	54	829	297	1126	45	27	56
Mental Retardation	16	9	166	94	180	123	50	35	412	261	673	27	6	40
Aggressive and Antisocial Behavior	45	12	242	65	192	39	115	45	594	161	755	30	45	20
Passive, Withdrawn, Asocial Behavior	38	15	174	74	110	50	60	25	382	164	546	22	32	14
Emotional Instability and Anxiety Symptoms	45	16	205	86	108	46	49	25	407	173	580	23	34	16

(continued)

TABLE 1 (continued)

Referral problems	Under 6 M	Under 6 F	6 to 10 M	6 to 10 F	10 to 14 M	10 to 14 F	14 to 18 M	14 to 18 F	All ages M	All ages F	All ages Total	Total as % of N	Percent of all cases in 2 community clinics	Percent of all cases in 2 school clinics
Hyperactivity and Motor Symptoms	24	12	139	59	69	24	20	5	252	100	352	14	22	8
Sexual Behavior Problems	6	1	12	10	13	6	6	6	37	23	60	2½	4	1
Toilet Training	27	7	50	25	36	14	0	2	113	48	161	6½	12	1
Speech Defects	25	9	62	19	26	9	10	1	123	38	161	6½	6	7
Miscellaneous	14	17	90	38	71	51	34	29	209	135	344	14	20	9

Source: Gilbert, 1957, p. 40.

and the social adjustment ($p < .05$) areas. Rice concluded that there were six main categories of referrals, that pupils appeared to be referred for different reasons at different grade levels, and that intellectual disabilities are common problems at any grade level.

Hartman and Losak (1966) investigated cases referred to the Psychological Service Staff in Dade County, Florida, to determine characteristics of dull normal children referred for psychological services. A sample of 514 cases, 212 dull normal and 302 average, were compared. The dull normal group was defined by a WISC or WAIS IQ of 76-89, the average age IQ being 90-109. The Stanford or California Reading Test scores were used to determine reading retardation at each grade level: severe retardation--25th percentile or below; moderate retardation--25th-39th percentiles; at grade level--40th-59th percentiles; above grade level--60th percentile and above. They found that 38% of the dull normal and 40% of the average group were referred for educational guidance. The dull normal group had a predominance of reading retardation. Eighty percent of the dull normal group had moderate or severe reading retardation; the average group had 46% in this category. Boys were referred with twice the incidence of girls; age was distributed normally from 6-17. Eighty-two percent of the dull normals were from

elementary schools, 17% from junior high schools, and 1% from high schools. The average group exhibited a similar distribution among grade levels. The second grade had the highest percentage of referrals and the sixth grade had the lowest percentage of referrals for both groups.

White and Charry (1966) analyzed cases referred to school psychologists in Westchester County, New York, during the 1962-1963 academic year to determine the roles of social class, sex, age, intelligence, and achievement in school-disorder problems (any problem for which a child is referred to a school psychologist). Using a referral sample of 2,866 pupils from 19 school systems which had a total population of 95,000 pupils, K-12th grade, they collected data from 46 school psychologists through a questionnaire survey.

The results of the survey revealed the following:

1. Approximately 5% of all pupils in the total population were referred to school psychologists for school disorders.

2. The school staff (teachers, administrators, guidance counselors, special teachers) constituted the largest source of referrals (2,381 or 75%).

3. The specific aspect of school disorder which was found to be the most prevalent reason for referral was learning disability (27.3%), intelligence evaluation (14%),

emotional problems (13%), and classroom behavior disorders (11%) were the other major reasons. Educational performance played the major role in the referral chain.

4. Approximately 10% of the referrals were diagnosed as culturally deprived, therefore defining the primary school problem as a lack of cultural background and not a lack of aptitude as they saw it.

5. Twenty-one percent of the referrals were recommended by the school psychologist for treatment by special education or staff subject specialists. In 15% of the cases parent counseling was recommended; the remainder of the cases were recommended for various counseling and psychotherapeutic assistance.

6. The bulk of referrals were found to be in the upper third of the socioeconomic scale (0-99) based on the U.S. Bureau of Census Index of Socioeconomic Status. This data is no surprise, since Westchester County, New York, has a substantial upper SES population.

7. The mean IQ score and the median IQ score for the referral group were 102 and 103, respectively. The IQ distribution formed a normal curve with a range of 50-150.

8. Boys were referred with twice the incidence of girls; referrals were predominantly from the elementary grades. Table 2 reflects the sex and grade data from the referral sample.

TABLE 2

REFERRALS BY SEX AND GRADE[a]

Grade	Male percentage	Female percentage	Total N
K	64.8	35.2	287
1	68.4	31.5	355
2	71.1	28.9	280
3	70.9	29.1	265
4	68.2	31.8	239
5	60.6	39.4	213
6	60.9	39.1	225
7	68.0	32.0	175
8	65.2	34.8	187
9	68.0	32.0	147
10	60.4	39.5	177
11	59.3	40.7	113
12	47.8	52.2	67
			2,730

[a]Grade is that of referral sample, not total school population.

Source: White and Charry, 1966, p. 37.

9. Approximately 74% of the referrals were reported as being in the lower half of their class in achievement; accordingly, 26% were reported in the upper half.

10. The bulk of referrals that came from the elementary grades peaked at the K-3 grade group and at the 6-10 age group.

Nicholson (1967) surveyed 59 Ohio school districts during the 1962-1963 school year, and analyzed the 590 cases referred to school psychologists and the referral process. The results of his study are listed below:

1. Seventy-three percent of the referrals came from teachers. Principals, counselors, and parents accounted for 9%, 8%, and 5%, respectively, of the referrals. He reports these data as agreeing with that obtained by the Cincinnati Public Schools in a survey of their psychological services in 1963.

2. Eighty-one percent of the cases involved children in grades 1-6. Fifty-six percent of the cases were in grades 1-3. Approximately 15% of the referrals were in grades 7-12; only 4% were in grades 10-12.

3. Academic difficulties (AD) accounted for 46% of the stated reasons for referral. Approximately 95% of these academic difficulties were in grades K-6.

4. Boys were referred with twice the incidence of

girls, 69% vs. 31%.

Gross and Farling (1969) present the results of a 1964-1965 Ohio Department of Education study (1966) of school psychologist case-load information. A total of 177 school psychologists replied. The total case load for the 177 school psychologists was 42,249 with the majority of cases in the primary grades. Case loads ranged from 100-300 per year; the mean and median case loads were 236 and 176.5, respectively. Seventy-two percent of all cases were age 11 or below; 45% were below age 9. Seventy-two percent of the cases were in the sixth grade or below; 49% were in grades 3 or below. Boys were referred with approximately twice the incidence of girls, 64% vs. 36%. Academic problems accounted for 27% of the referral reasons; class placement accounted for 37% of the referrals. Seventy percent of the cases were in the IQ range 70-119; 46% were between 80-109.

An analysis of the results of the studies mentioned in this section reveals the following data for the cases referred to school psychologists and their child guidance counterparts:

1. Teachers and school staff are the major referral sources.

2. Primary-grade children account for the bulk of referrals.

3. Boys account for twice as many referrals as girls.

4. Six- to twelve-year-olds account for the bulk of referrals.

5. Academic difficulties play an important role in referral problems.

6. Cases referred are usually in the average and dull normal intelligence ranges.

7. Socioeconomic status data are inconclusive as to which SES level dominates school-psychologist referrals.

Some Variables Affecting Reading Achievement

Sex differences in reading achievement have been the subject of much research. Hughes (1953) analyzed sex differences in the reading achievement of 600 boys and girls in grades 3 through 8. She found that significant differences existed in favor of the girls as better readers in grades 3 and 4, but that in grades 5 through 8 the differences were not significant and were inconsistent.

Traxler and Spaulding (1954) studied 400 boys and girls in selected New York private schools and found no significant differences among them in grades 3, 5, and 7 in vocabulary and comprehension levels as measured by the Stanford Achievement Test.

Anderson et al. (1956, 1957) and Spache et al. (1966) found differences in favor of the girls at lower

ability levels, but also found that these differences tended to disappear at higher ability levels.

Prescott (1955) compared 15,000 elementary-level boys and girls in reading achievement and found no significant differences between them. Manning (1966), Powell et al. (1963), and Spencer (1966) also found no significant differences between the sexes in reading achievement.

Gates (1961) studied 13,000 boys and girls in grades 2 through 8 and compared mean raw scores on the Gates Reading Survey Tests. He found significant differences in favor of the girls at each level. He also noted more variability among the boys' scores and found that more boys scored at the lower end of each grade.

Preston (1962) compared reading-achievement scores of approximately 2,500 German and American fourth and sixth graders. He found that on all levels and on all tests American girls had higher mean scores than the American boys. Opposite results were found for the German students.

Wozencraft (1967) compared a third grade of 364 boys and girls with a sixth grade of 603 boys and girls for vocabulary and comprehension achievement using the Stanford Achievement Test. She found that sex differences were significant in favor of the girls in grade 3 but not in grade 6.

Sex differences in reading readiness also were

studied by Balow (1963), Carroll (1948), and Samuels (1943). In all cases girls scored higher than boys and appeared more ready to learn to read.

Cardon (1968), in his consideration of sex differences in school achievement, summarizes the research in this area quite succinctly. He concludes that there is a difference in the academic performance of boys and girls that can hardly be questioned. Even those studies that did not produce significant differences between the achievement of boys and girls did usually reveal higher scores for the girls than for the boys.

Sex differences appear to be a fact in the research on reading achievement. It also appears that the differences between the achievement of boys and girls may be affected by at least two variables, i.e., grade level and level of ability. These findings also are consistent with the appearance of a majority of boys in remedial-clinic populations (Dechant, 1968; Kottmeyer, 1959).

Socioeconomic status has also been studied as a variable that is highly related to reading-test performance and reading disability at all age levels (Farr, 1969). General discussions regarding the relation between SES and reading/academic achievement can be found in Burton (1953), Dechant (1968), Dockrell (1964), Harris (1970), Havighurst (1961), Robinson (1946), and Sexton

(1961).

Hanson and Robinson (1967) studied reading readiness and achievement of 255 primary-grade children of different socioeconomic levels in Chicago. They found that lower-SES-level children scored significantly lower than the higher SES group in reading readiness and achievement in each grade with the difference increasing at each ascending grade level. Differences between lower and average SES groups were not significant but were found. Differences between higher and average SES groups were not significant until the second or third grade.

Filmer and Kahn (1967) also studied SES and readiness. Using 400 white and non-white boys and girls in the first grade, they found that the middle SES group did not score higher than the lower SES groups on readiness tests. However, they did find a significant interaction between SES and race with regard to readiness scores. They concluded that SES and race must both be considered when comparing for readiness differences.

Hill and Giamatteo (1963) investigated the relationship of SES to school achievement using 233 third graders in western Pennsylvania. By comparing means of the Iowa Test of Basic Skills they found that children from the high SES group by the third grade were eight months ahead of the low SES group in vocabulary

achievement. In reading comprehension the high-SES group was a year ahead of the low-SES group. They also reported high correlations between SES and vocabulary skill (.838) and reading comprehension (.902). A comparison of second-semester reading scores from grades 1 through 3 using tests for the Scott Foresman Texts showed the high-SES group significantly above the low-SES group in all but two out of 64 subtest areas reported.

Coleman (1940) investigated the relationship of SES to achievement in junior-high-school students. Studying a national sampling of 4,784 cases from all the geographic regions of the United States and from varied types and sizes of schools, he found that poor readers consistently were found in the low-SES group. He found the differences in reading achievement reliable in each grade when probable errors of the medians, probable errors of the differences of the medians, and critical ratios were computed.

Chandler (1966) provides a complete review of the research concerning SES and reading disability. Three relevant studies from his review are discussed below.

Wilson (1960) analyzed SES and reading achievement in Berkeley, California. Comparing children from low, middle, and high SES levels with regard to reading ability as measured by the California Reading Achievement Test,

he found that 90% of the upper SES level were reading at grade level, while only about 33% of the lower SES level were reading at grade level. The mean test scores for the high, middle, and low SES levels were 106, 92, and 73, respectively.

Granzow (1954) compared normal achievers and underachievers in the sixth and seventh grades in Denver and found that the underachievers came predominantly from lower-SES homes. Parents of the underachievers were also found to be more indifferent to reading and to have had fewer educational advantages.

Dimitz et al. (1958) studied 717 sixth graders from selected elementary schools in Columbus, Ohio, and found that pupils from more desirable census tracts (equated with higher SES) scored significantly higher on school-achievement tests. Children from the more desirable census tracts had a median reading grade score of 6.64 while children from the less desirable census tracts (equated with lower SES) had a median reading grade score of 4.80.

Research indicates that SES is a variable in reading achievement. It appears that low-SES level is more often associated with reading disability than high-SES level.

Race as a variable in reading achievement has been considered with SES in some research studies. Filmer and Kahn (1967), discussed before, found a significant

interaction of race and SES in reading readiness. Vane (1966), in a study of 272 Negro and white students in an integrated high school in a suburban school district, not only found a relationship between low SES and underachievement, but also found that, within the low-SES group, Negroes were even lower achievers than whites.

Wilson's (1960) study in Berkeley, California, discussed before, revealed racial data as well as SES data. The low-SES census tracts which produced the lowest reading achievers also had a higher Negro population than the city-wide average percentage of Negroes. The data hence not only revealed an interaction of SES and race, but also the evidence of lower reading scores among Negroes.

Race has also been studied separately as a variable affecting reading/academic achievement.

Cooper (1964) compared the reading-achievement scores of over 25,000 Negro and white children in grades 4-12 in the Georgia Public Schools during the 1958-1959 academic year. She compared both vocabulary and comprehension scores from the California Achievement Test Battery and found that white pupils obtained a higher proficiency than Negro pupils in vocabulary achievement at all grade levels and that the difference increased as grade level increased. Data on comprehension scores showed the same tendency as vocabulary scores. She

concluded that there was an increasing lag in both white and Negro children between reading achievement and expected achievement which increased at successive grade levels, but that the degree of disability was much worse among Negro students.

Baughman and Dahlstrom (1968) conducted an extensive study of Negro and white differences in achievement. Using a student population of over 1,500 Negro and white students in grades K-8 in Millfield, North Carolina, during a four-year period (1961-1965), they analyzed race differences in intellectual ability and academic achievement. Results on the Stanford Achievement Tests revealed that mean scores of Negro boys and girls on the Paragraph Meaning, Word Meaning, and Battery Total were below those of both white boys and white girls at each age level. Negro boys and girls also were shown to drop further behind as age level increased. Within each race the sex difference was also seen. Negro girls consistently scored higher than Negro boys at all age levels, while white girls scored consistently higher than white boys only at upper age levels (11-14).

Carson and Rabin (1960) did not study reading achievement, but did compare 90 Negro and white fourth, fifth, and sixth graders with regard to verbal comprehension and communication skills. The Negro group was divided

into two subgroups: Northern Negro and Southern Negro. The white group was from the North. Using the WISC Vocabulary and the Full-Range Picture Vocabulary Test, they found that Northern whites scored highest, Northern Negroes scored next highest, and Southern Negroes scored lowest on both measures. The SES-race interaction is seen here, also.

Race appears to be a variable affecting reading achievement. Its close relationship to SES makes it difficult to isolate its pure effect with any degree of certainty. Available studies do, however, demonstrate lower reading-achievement levels among Negro children as compared to white children, with the difference increasing with successive grade and age levels.

CHAPTER III

METHOD

This chapter describes the data-collection procedures used, the population surveyed, the procedures used to analyze the collected data statistically and the limitations in this study.

Questionnaire

A questionnaire was designed for distribution to selected school psychologists in order to collect the required data on the cases referred to them during the prescribed March 22, 1971, to May 1, 1971, timeframe. The original plan was to only use those cases referred during the month of April, but the school holidays during that period necessitated extending the period to insure that a large enough sample could be analyzed.

The questionnaire was designed to furnish individual descriptive data, IQ scores, reading scores, remedial-reading data, and reason for referral data. A copy of the questionnaire and its explanation sheet is found in Appendix I.

The Population

Two populations require explanation, the population of school psychologists and the population of subjects from which the data were collected. Also, the collection areas must be described in order for the results to be seen in their proper perspective.

School Psychologists

The selected group of school psychologists used as collection sources were 5 of the 11 doctoral students enrolled in the School Psychology Internship Program at Rutgers University during the Spring 1971 semester and functioning in a school psychologist role in school districts in New Jersey, Tennessee, and California (primarily a lack of time to assist and the unavailability of requested data prevented the other six students from participating). In addition to these five psychologists, three other school districts were selected because of the willingness of their Special Service Directors to cooperate in the data-collection effort. The eight geographical areas of the collection sources will be described in a later section.

Subjects

The original request used with the questionnaire sought all the cases referred to each school psychologist

during the month of April. When the collection period was extended, it necessitated a change in plans to include all cases or a random sample of cases between March 22 and May 1. Therefore, the data reflect either the entire case load for this particular period or a random sample of the cases for this period.

Collection Areas

Descriptive data on the eight collection areas are presented here to enhance further the meaningfulness of the results. Population sizes, race breakdowns, sex breakdowns, and an indication of the general economic level of the area are presented. These statistics were extracted from the Advanced Reports of the 1970 Census published by the U.S. Department of Commerce/Bureau of the Census, Washington, D.C., February 1971. State and county statistics are always given; individual community statistics are given when available in U.S. Census data. Table 3 reflects the descriptive statistics for the geographical areas used as collection sources.

Mathematical Computation and Statistical Analysis of the Data

Mathematical Computation of CAGP and MAGP

Mathematical computation of those below CAGP was determined by comparing their actual reading scores with their CAGP. CAGP was determined by subtracting 5.4 years

TABLE 3

DESCRIPTIVE STATISTICS FOR THE COLLECTION AREAS USED IN THIS STUDY

Descriptive statistics	Collection areas							
	1	2	3	4	5	6	7	8
State								
Total Population	7,168,164						3,923,687	19,953,134
White	6,349,908						3,283,432	17,761,032
Negro	770,292						631,696	1,400,143
Other	47,964						8,559	791,959
Male	3,467,373						1,896,935	9,816,685
Female	3,700,791						2,026,752	10,136,449
Percent Urban	89%						59%	91%
Median Value --Home	$23,400						$12,700	$23,100
Median Rent	$111						$62	$113
County								
Total Population	198,372	459,379	SAME AS AREA 2	583,813	SAME AS AREA 4	SAME AS AREA 1	448,003	631,498
White	190,134	418,352		554,597			358,765	566,332
Negro	7,166	38,275		26,067			87,876	36,418
Other	1,072	2,752		3,149			1,362	28,748

(continued)

TABLE 3 (continued)

Descriptive statistics	Collection areas							
	1	2	3	4	5	6	7	8
Male	98,094	224,076		289,085			213,379	310,022
Female	100,278	235,303		294,728			234,624	321,476
Percent Urban	76%	82%		95%			97%	95%
Median Value --Home	$29,700	$23,100		$23,900			$15,800	$18,100
Median Rent	$127	$122		$128			$81	$107
Community								
Total Population	54,623	10,545	48,715	14,385	21,796	448,003	3,721	
White		8,693		13,462	21,465			
Negro		1,803		842	165			
Other		49		81	166			
Male		5,017		6,877	10,439			
Female		5,528		7,508	11,357			
Percent Urban								
Median Value --Home		$19,200		$24,400	$26,300			
Median Rent		$114		$137	$143			

(the age at onset of kindergarten) from the chronological age. The formula is:

$$CA - 5.4 = CAGP$$

Mathematical computation of those below MAGP was determined by comparing their actual reading score with their MAGP. MAGP was computed by first multiplying chronological age by the IQ and dividing that figure by 100 to obtain the mental age. The formula is:

$$CA \times \frac{IQ}{100} = MA$$

Then, 5.4 was subtracted from the MA to obtain the MAGP. The formula is:

$$MA - 5.4 = MAGP$$

In both cases all scores and ages were converted to months prior to computation using 12 as the common denominator.

Statistical Analysis

Statistical analysis was done using the chi-square statistic. Rutgers University computer program BMDO2S was used for all chi-square computations; Rutgers University computer program BMDO4D was used for all frequency counts among the variables. Chi-squares were computed to determine significant proportions of sexes, races, ages, grades, socioeconomic levels, and IQ ranges among the four major variables; those with reading mentioned/not mentioned in the referral, those below/not below CAGP, those below/not

below MAGP, and those below/not below both CAGP and MAGP. The four major variables were also subjected to chi-square analysis to determine significant proportions among them. Chi-squares, degrees of freedom, and levels of significance are reported when applicable.

Limitations of the Study

Socioeconomic status determinations most often were subjective judgments, and hence do not conform to any published scale of socioeconomic delineation.

Intelligence quotients and reading scores were obtained by varied types and named tests, hence comparison of results can only be general in nature.

Not all the data requested were available on each case, hence each category and question surveyed differed in number of cases analyzed.

The race and socioeconomic status data for the districts are not conclusive, since the distribution of race and socioeconomic status within the districts' geographical areas cannot be assumed to be the same as that of the schools used. The distribution of the races and socioeconomic levels for the schools used was not available. The race and SES data for the general geographical areas within which the school districts are located are given only to describe generally the race and SES setting within the areas used.

CHAPTER IV

RESULTS

This chapter presents an analysis of the overall data in regard to the questions posed in Chapter I.

Overall Data for the Study

The eight school districts reported a total of 96 cases referred to school psychologists during the prescribed timeframe. The specific descriptive data for those cases referred (summarized in Appendix II) are as follows:

1. Sixty-six (68.8%) of the 96 cases referred were males.

2. Eighty-three (86.5%) of the 96 cases referred were age 11 or below; 13 (13.5%) were age 12-16. Forty-one (42.7%) of the cases referred were between the ages 5-8; 42 (43.8%) of the cases referred were between the ages 9-11. Sixty-nine (72%) of the cases were between the ages 7-10. The mean and median ages for the total group were 9.7 and 9.4 years, respectively.

3. Eighty-one (84.4%) of the 96 cases were in grades K-6; 58 (60.4%) of the 96 cases were in grades K-3. There were no referrals from grades 10-12; 6 (6.3%) of the

referrals were from Special Education classes.

4. Eighty-one (90%) of the 90 determinable cases were Caucasian; 5 (5.6%) of the cases were Negro.

5. Sixty-three (65.6%) of the 96 cases were from a middle socioeconomic status. Twenty-one (21.9%) of the cases were from a high socioeconomic status. Only 12 (12.5%) were determined to be from a low socioeconomic status or actually culturally deprived.

6. Fifty-four (70.2%) of the determinable 77 cases were in the IQ range 81-120, 30 cases (39%) were in the range 81-100, while 24 cases (31.2%) were in the range 101-120. Twenty cases (26%) were in the 80 or below category. The mean and median IQ for the total group was 92.4 and 93, respectively.

Question 1--Reading Specifically Mentioned in the Referral

Thirty-two of 96 cases (33.3%) referred to school psychologists had reading retardation specifically mentioned in the oral and/or written referral. Additionally, 25 of the 26 determinable cases (96.2%) with reading mentioned in the referral were reading below CAGP, 25 of 25 determinable cases (100%) with reading mentioned were reading below MAGP, and 24 of 25 determinable cases (96%) with reading mentioned in the referral were reading below both CAGP and MAGP. Those without reading mentioned in the

referral displayed a similar reading retardation incidence. Forty of a determinable 53 cases (75.5%) that did not have reading mentioned were reading below CAGP, 32 of a determinable 49 cases (65.3%) that did not have reading mentioned were reading below MAGP, and 27 of 49 determinable cases (55.1%) that did not have reading mentioned were reading below both CAGP and MAGP.

The proportions of cases below/not below CAGP, MAGP, and both CAGP and MAGP were significantly different in the reading specifically mentioned/not mentioned categories. The chi-square for the reading mentioned/not mentioned and the below/not below CAGP categories showed a significant difference in the proportions at the .05 level. The chi-square for the reading mentioned/not mentioned and the below/not below MAGP categories showed a significant difference in the proportions at the .001 level. The chi-square for the reading mentioned/not mentioned and the below/not below both CAGP and MAGP categories showed a significant difference in the proportions at the .001 level. In all three cases the predominance of the below vs. not below CAGP, MAGP, and both CAGP and MAGP in the reading mentioned category accounted for a substantial portion of the significant differences as stated. Table 4 reflects these proportions and significant differences.

TABLE 4

READING RETARDATION AMONG THOSE WITH READING SPECIFICALLY MENTIONED IN THE REFERRAL

Reading retardation	Reading specifically mentioned		
	Yes	No	Total
Below CAGP			
Yes	25	40	65
No	1	13	14
Total	26	53	79*
Below MAGP			
Yes	25	32	57
No	0	17	17
Total	25	49	74**
Below both CAGP and MAGP			
Yes	24	27	51
No	1	22	23
Total	25	49	74***

*$\chi^2 = 5.11$, df = 1, $p < .05$.

**$\chi^2 = 11.26$, df = 1, $p < .001$.

***$\chi^2 = 12.92$, df = 1, $p < .001$.

Question 2--Reading Retardation Evidenced By Below CAGP Scores

Sixty-five of a determinable 79 cases (82%) referred to school psychologists exhibited reading retardation as evidenced by an actual reading level below the average for pupils at their chronological age levels (CAGP). The mean amount of reading retardation exhibited by the 65 determinable cases that had reading scores below their CAGP was 29.1 months.

Question 3--Reading Retardation Evidenced By Below MAGP Scores

Fifty-seven of a determinable 74 cases (77%) referred to school psychologists exhibited reading retardation as evidenced by an actual reading level below the average for pupils at their mental age levels (MAGP). The mean amount of reading retardation evidenced by the 57 determinable cases that exhibited a reading score below their MAGP was 22.4 months.

Additionally, 51 of a determinable 74 cases (69%) referred to school psychologists exhibited reading retardation as evidenced by an actual reading level below both CAGP and MAGP.

A significant difference in the proportion of those below/not below MAGP was found in the below/not below CAGP categories ($p < .001$). A significant difference in the proportion of those below/not below both CAGP

and MAGP was found in the below/not below CAGP categories and in the below/not below MAGP categories ($p < .001$). The fact that being below CAGP is usually accompanied by being below MAGP/both CAGP and MAGP accounted for a substantial portion of the significant difference as stated. Table 5 reflects these proportions and significant differences.

Question 4--Distribution of Cases in the Reading Mentioned, Below CAGP, Below MAGP, and Below Both CAGP and MAGP Categories According to Sex, Age, Grade, Race, Socioeconomic Status, and IQ

Cases With Reading Specifically Mentioned

Sex data. Boys outnumbered girls more than 2-1 in both cases with and without reading specifically mentioned. Twenty-three of the determinable 32 cases (71.9%) with reading mentioned were males; 43 of the determinable 64 cases (67.2%) without reading mentioned were males.

Age data. Thirty-one of the determinable 32 cases (97%) that had reading mentioned were between the ages 5-11; 17 of these cases (53.1%) were between the ages 5-8. Fifty-two of the determinable 64 cases (81.3%) that did not have reading mentioned were between the ages 5-11.

Grade data. Thirty-two of the determinable 32 cases (100%) that had reading mentioned were in grades K-6; 24 of these 32 cases (75%) were in grades K-3. Forty-nine of the determinable 64 cases (76.5%) that did not have

TABLE 5

DISTRIBUTION OF CASES AMONG THOSE BELOW/
NOT BELOW CAGP, MAGP, OR BOTH

Cross variable	Below CAGP			Below MAGP		
	Yes	No	Total	Yes	No	Total
Below MAGP						
Yes	51	6	57			
No	9	8	17			
Total	60	14	74*			
Below both CAGP and MAGP						
Yes	51	0	51	51	0	51
No	9	14	23	6	17	23
Total	60	14	74**	57	17	74***

*χ^2 = 11.39, df = 1, p < .001.

**χ^2 = 38.28, df = 1, p < .001.

***χ^2 = 48.93, df = 1, p < .001.

reading mentioned were in grades K-6; 34 of these 64 cases (53.1%) were in grades K-3.

Racial data. Twenty-eight of the determinable 31 cases (90.3%) that had reading specifically mentioned were Caucasian; 53 of the determinable 59 cases (89.8%) that did not have reading mentioned were Caucasian.

Socioeconomic status data. Nineteen of the determinable 32 cases (59.4%) that had reading mentioned were in a middle socioeconomic status; 8 of these cases (25%) were in a high socioeconomic status. Forty-four of the determinable 64 cases (68.8%) that did not have reading mentioned were in a middle socioeconomic status; 13 of these cases (20.3%) were in a high socioeconomic status.

IQ data. Nineteen of the determinable 25 cases (76%) that had reading mentioned were in the IQ range 81-120; 12 of these cases (48%) were in the range 81-100. Thirty-five of the determinable 52 cases (67.3%) that did not have reading mentioned were in the IQ range 81-120; 18 of these 52 cases (34.6%) were in the IQ range 81-100.

Table 6 reflects the distribution of these variables within the reading mentioned/not mentioned categories.

TABLE 6

DISTRIBUTION OF DESIGNATED VARIABLES AMONG THE CASES REFERRED WITH READING SPECIFICALLY MENTIONED IN THE REFERRAL

Designated variable	Reading specifically mentioned		
	Yes	No	Total
SEX			
Male	23	43	66
Female	9	21	30
Total	32	64	96
AGE			
5-8	17	24	41
9-11	14	28	42
12-14	1	7	8
15-16	0	5	5
Total	32	64	96
GRADE			
K-3	24	34	58
4-6	8	15	23
7-9	0	9	9
10-12	0	0	0
Special Education	0	6	6
Total	32	64	96
RACE			
Caucasian	28	53	81
Negro	1	4	5
Other	2	2	4
Total	31	59	90
SOCIOECONOMIC STATUS			
Low	5	7	12
Middle	19	44	63
High	8	13	21
Total	32	64	96
IQ RANGE			
80 or below	6	14	20
81-100	12	18	30
101-120	7	17	24
Above 120	0	3	3
Total	25	52	77

Cases That Were Below CAGP

Sex data. Boys outnumbered girls more than 2-1 in those cases both below and not below CAGP. Forty-seven of the determinable 65 cases (72.3%) that were below CAGP were males; 11 of the 14 determinable cases (78.6%) that were not below CAGP were males.

Age data. Fifty-seven of the determinable 65 cases (87.7%) that were below CAGP were between the ages 5-11; 32 of these cases (49.2%) were between the ages 9-11. Eleven of the 14 cases (78.6%) that were not below CAGP were between the ages 5-11; 6 of these cases (42.9%) were between the ages 9-11.

Grade data. Fifty-five of the determinable 65 cases (84.6%) that were below CAGP were in grades K-6; 39 of these 65 cases (60%) were in grades K-3. Eleven of the determinable 14 cases (78.6%) that were not below CAGP were in grades K-6; 6 of these 14 cases (42.9%) were in grades K-3.

Racial data. Fifty-three of the determinable 61 cases (87%) that were below CAGP were Caucasian; 12 of the 12 determinable cases (100%) that were not below CAGP were Caucasian.

Socioeconomic status data. Forty-one of the determinable 65 cases (63.1%) that were below CAGP were in a middle socioeconomic status; 14 of these 65 cases

(21.5%) were in a high socioeconomic status. Nine of the 14 determinable cases (64.3%) that were not below CAGP were in a middle socioeconomic status; 3 of these 14 cases (21.4%) were in a high socioeconomic status.

IQ data. Forty-three of a determinable 60 cases (71.6%) that were below CAGP were in the IQ range 81-120; 26 of these 60 cases (43.3%) were in the IQ range 81-100. Nine of the determinable 14 cases (64.3%) that were not below CAGP were in the IQ range 81-120; 7 of these 14 cases (50%) were in the IQ range 81-100.

Table 7 reflects the distribution of these variables within the below CAGP/not below CAGP categories.

Cases That Were Below MAGP

Sex data. Boys outnumbered girls more than 2-1 in those cases that were below and not below MAGP. Forty-two of the determinable 57 cases (73.7%) that were below MAGP were males; 12 of the determinable 17 cases (70.6%) that were not below MAGP were males.

Age data. Forty-nine of the determinable 57 cases (86%) that were below MAGP were between the ages 5-11; 31 of these 57 cases (54.4%) were between the ages 9-11. Fourteen of the determinable 17 cases (82.4%) that were not below MAGP were between the ages 5-11; 8 of these 17 cases (47.1%) were between the ages 9-11.

Grade data. Forty-nine of the determinable 57

TABLE 7

DISTRIBUTION OF DESIGNATED VARIABLES AMONG THE CASES REFERRED THAT WERE BELOW CHRONOLOGICAL AGE GRADE PLACEMENT

	Below CAGP		
Designated variable	Yes	No	Total
SEX			
Male	47	11	58
Female	18	3	21
Total	65	14	79
AGE			
5-8	25	5	30
9-11	32	6	38
12-14	5	2	7
15-16	3	1	4
Total	65	14	79
GRADE			
K-3	39	6	45
4-6	16	5	21
7-9	5	3	8
10-12	0	0	0
Special Education	5	0	5
Total	65	14	79
RACE			
Caucasian	53	12	65
Negro	5	0	5
Other	3	0	3
Total	61	12	73
SOCIOECONOMIC STATUS			
Low	10	2	12
Middle	41	9	50
High	14	3	17
Total	65	14	79
IQ RANGE			
80 or below	15	4	19
81-100	26	2	28
101-120	17	7	24
Above 120	2	1	3
Total	60	14	74

cases (86%) that were below MAGP were in grades K-6; 31 of these 57 cases (54.4%) were in grades K-3. Twelve of the determinable 17 cases (70.6%) that were not below MAGP were in grades K-6; 10 of these 17 cases (58.8%) were in grades K-3.

Racial data. Forty-seven of the determinable 52 cases (90%) that were below MAGP were Caucasian; 14 of the determinable 16 cases (87.5%) that were not below MAGP were Caucasian.

Socioeconomic status data. Thirty-five of the determinable 57 cases (61.4%) that were below MAGP were in a middle socioeconomic status; 15 of these 57 cases (26.3%) were in a high socioeconomic status. Ten of the determinable 17 cases (58.8%) that were not below MAGP were in a middle socioeconomic status; 5 of these 17 cases (29.4%) were in a low socioeconomic status.

IQ data. Forty-four of the determinable 57 cases (77.2%) that were below MAGP were in the IQ range 81-120, equally divided with 22 cases in the 81-100 range and 22 cases in the 101-120 range. Nine of the determinable 17 cases (52.9%) that were not below MAGP were in the IQ range 80 or below. The proportion of those below/not below MAGP was significantly different within the four IQ ranges ($p < .02$). The large number of cases between 81-120 in the below MAGP category and the large number in the 80 or

below range in the not below MAGP category accounted for a substantial portion of the significant difference as stated.

Table 8 reflects the distribution of these variables and the significant proportion in the below/not below MAGP categories.

Cases That Were Below Both CAGP and MAGP

Sex data. Boys outnumbered girls more than 2-1 in those cases that were below and not below both CAGP and MAGP. Thirty-six of the determinable 51 cases (70.6%) that were below both CAGP and MAGP were males; 18 of the determinable 23 cases (78.3%) that were not below both CAGP and MAGP were males.

Age data. Forty-four of the determinable 51 cases (86.3%) that were below both CAGP and MAGP were between the ages 5-11; 28 of these 51 cases (54.9%) were between the ages 9-11. Nineteen of the determinable 23 cases (82.6%) that were not below both CAGP and MAGP were between the ages 5-11; 10 of these 23 cases (43.5%) were between the ages 5-8.

Grade data. Forty-four of the determinable 51 cases (86.3%) that were below both CAGP and MAGP were in grades K-6; 29 of these 51 cases (56.9%) were in grades K-3. Seventeen of the determinable 23 cases (73.9%) that were not below both CAGP and MAGP were in grades K-6; 12 of these 23 cases (52.2%) were in grades K-3.

TABLE 8

DISTRIBUTION OF DESIGNATED VARIABLES AMONG THE CASES REFERRED THAT WERE BELOW MENTAL AGE GRADE PLACEMENT

Designated variable	Below MAGP		
	Yes	No	Total
SEX			
Male	42	12	54
Female	15	5	20
Total	57	17	74
AGE			
5-8	18	8	26
9-11	31	6	37
12-14	6	1	7
15-16	2	2	4
Total	57	17	74
GRADE			
K-3	31	10	41
4-6	18	2	20
7-9	5	3	8
10-12	0	0	0
Special Education	3	2	5
Total	57	17	74
RACE			
Caucasian	47	14	61
Negro	3	1	4
Other	2	1	3
Total	52	16	68
SOCIOECONOMIC STATUS			
Low	7	5	12
Middle	35	10	45
High	15	2	17
Total	57	17	74
IQ RANGE			
80 or below	10	9	19
81-100	22	6	28
101-120	22	2	24
Above 120	3	0	3
Total	57	17	74*

*$\chi^2 = 10.22$, df = 3, $p < .02$.

Racial data. Forty-two of the determinable 47 cases (89.4%) that were below both CAGP and MAGP were Caucasian; 19 of the determinable 21 cases (90.5%) that were not below both CAGP and MAGP were Caucasian.

Socioeconomic status data. Thirty-one of the determinable 51 cases (60.8%) that were below both CAGP and MAGP were in a middle socioeconomic status; 13 of these 51 cases (25.5%) were in a high socioeconomic status. Fourteen of the determinable 23 cases (60.9%) that were not below both CAGP and MAGP were in a middle socioeconomic status.

IQ data. Thirty-nine of the determinable 51 cases (76.4%) that were below both CAGP and MAGP were in the IQ range 81-120; 22 of these 51 cases (43.1%) were in the IQ range 81-100. Thirteen of the 23 determinable cases (56.5%) that were not below both CAGP and MAGP were in the IQ range 81-120; 9 of these 23 cases (39.1%) were in the 80 or below range.

Table 9 reflects the distribution of these variables in the below/not below both CAGP and MAGP categories.

Question 5--Referrals That Have Had Prior Remedial-Reading Instruction

Eighteen of the determinable 79 cases (23%) referred to school psychologists had previously attended remedial-reading instruction; in 17 cases (23%) prior

TABLE 9

DISTRIBUTION OF DESIGNATED VARIABLES AMONG THE CASES REFERRED THAT WERE BELOW BOTH CHRONOLOGICAL AND MENTAL AGE GRADE PLACEMENT

Designated variable	Below both CAGP and MAGP		
	Yes	No	Total
SEX			
Male	36	18	54
Female	15	5	20
Total	51	23	74
AGE			
5-8	16	10	26
9-11	28	9	37
12-14	5	2	7
15-16	2	2	4
Total	51	23	74
GRADE			
K-3	29	12	41
4-6	15	5	20
7-9	4	4	8
10-12	0	0	0
Special Education	3	2	5
Total	51	23	74
RACE			
Caucasian	42	19	61
Negro	3	1	4
Other	2	1	3
Total	47	21	68
SOCIOECONOMIC STATUS			
Low	7	5	12
Middle	31	14	45
High	13	4	17
Total	51	23	74
IQ RANGE			
80 or below	10	9	19
81-100	22	6	28
101-120	17	7	24
Above 120	2	1	3
Total	51	23	74

remedial-reading data was unknown. Eight of the 18 affirmative responses specified the length of that prior instruction; 7 of the 8 had had 1 year of instruction, while the other case had had 2 years of instruction.

Additionally, 22 of the determinable 60 cases (37%) which commented on the need for remedial-reading instruction after the interview recommended the child for this instruction based on their interview data.

Question 6--Remedial-Reading Personnel As Referral Sources

Only 1 of the 96 cases (1%) referred to school psychologists was referred by remedial-reading personnel. The classroom teacher accounted for 78 (81%) of the referrals. Table 10 reflects the distribution of cases among the referral sources.

TABLE 10

SOURCE OF REFERRAL DATA FOR THIS STUDY

Source	N	%
1. Reading Personnel	1	1.04
2. Classroom Teacher	78	81.25
3. Principal	7	7.29
4. Parent	3	3.13
5. Special Services Personnel	2	2.08
6. Learning Disability Specialist	3	3.13
7. Social Worker	1	1.04
8. Counselor	1	1.04
Total	96	100.00

CHAPTER V

DISCUSSION

A discussion of the results of this study, including a comparison of these results with the findings of similar studies, will be given in this chapter.

Questionnaire

The quantity and quality of the data reported on the questionnaires reflect a marked difference in the referral procedures and case loads among the reporting districts. Also, it was apparent that reading scores were not readily available; in most cases a general reading level was reported from the results of the Wide Range Achievement Test or a similar instrument. The frequent lack of any responses/lack of adequate responses to information concerning reading skills, remedial-reading instruction, and the need for future remedial-reading instruction indicates that a low priority has been given to the collection and use of this type of information by the school psychologist.

Reading Specifically Mentioned in the Referral and Related Variables

Those cases that had reading specifically mentioned in their referrals were dominated by the younger age group (11 years old and below), the younger grade group (K-3), those below CAGP, those below MAGP, and those below both CAGP and MAGP. Most interesting to note is the fact that 40 of the 53 cases that did not have reading mentioned were reading below CAGP; 32 of 49 cases that did not have reading mentioned were reading below MAGP; and 27 of 49 cases that did not have reading mentioned were reading below both CAGP and MAGP. These figures are perhaps the most noteworthy of all the collected data, since it appears that the evident reading retardation was overlooked or not considered significant at the time of referral by the various sources. These figures are even more interesting when you consider the fact that the primary-grade classroom teacher was the primary source of referral; she should be most aware of the reading-retardation problem and its ramifications.

Remedial-Reading Data

The few cases that had attended remedial reading should be noted, since the mean amounts of reading retardation in CAGP and MAGP were relatively high. Also, the amounts of unknown responses (17) to this question again indicates the relatively low priority to its collection effort.

Even more indicative of the low priority of remedial-reading data were the few cases (8) that reported the length of time of previous remedial-reading instruction. Finally, the 38 of 60 determinable cases that were not recommended for remedial reading revealed 27 reading below CAGP, 24 reading below MAGP, and 19 reading below both CAGP and MAGP.

Referral Source Data

There appears to be a referral gap between the remedial-reading specialist and the school psychologist. The classroom teacher seems to have a direct referral line to the school psychologist. Perhaps the introduction of the remedial-reading specialist as an intermediate step should be considered, particularly since so many cases are reading below CAGP and/or MAGP.

Reading Retardation, Sex, Age, Grade, Race, Socio-economic Status, IQ, and Source of Referral Data Compared With Similar Studies

The reading-retardation experience of this study (means of 29.1 and 22.4 months for the below CAGP and MAGP groups, respectively) is considerably more than that of Ellis' (1949) study (mean of 18 months). Ellis' data, based on the use of the Gray Oral and the Stanford Achievement Tests on each child, did, however, overcome the test variation limitation of this study. The predominance of boys among the reading retardates is consistent with

Anderson et al. (1956, 1957), Gates (1961), Hughes (1953), Spache et al. (1966), and Wozencraft (1967) who found that girls demonstrated a marked superiority over boys in reading scores (particularly at the lower grade levels), and with Dechant's (1968) and Kottmeyer's (1959) remedial-clinic population findings. The race and socioeconomic status data for the reading retardates, inconclusive and subject to the limitations of the study, cannot be meaningfully compared to other findings.

The overall sex data for this study is consistent with that of Gilbert (1957), Gross and Farling (1969), Hartman and Losak (1966), Nicholson (1967), and White and Charry (1966); in most cases boys were referred with at least twice the incidence of girls.

The overall age data for this study is consistent with that of Gross and Farling (1969), Nicholson (1967), and White and Charry (1966); in most cases ages 5-11 dominated the referrals, with ages 6-10 having the bulk within that group.

The overall grade data for this study is consistent with that of Gross and Farling (1969), Hartman and Losak (1966), and White and Charry (1966); in most cases the K-6 grades dominated the referrals, with grades K-3 having the bulk within that group.

There is no comparison for the race data, but it

does reflect the large predominance of Caucasians that is consistent with the descriptive data for the reporting districts. This data is subject to the limitations of the study mentioned in Chapter III.

The overall socioeconomic status data for this study is consistent with that of White and Charry (1966) in that the districts usually reported a predominance of the SES level which dominated the community, as measured by a comparison of the district community or county property value and rent against that of the state. Also, similar to White and Charry (1966) was the fact that only 12% were diagnosed as culturally deprived. This data also is subject to the limitations of the study mentioned in Chapter III.

The IQ data for this study is consistent with Gross and Farling (1969) and White and Charry (1966) in that the dull normal/normal ranges dominated the referral sample.

The source of referral data for this study is consistent with that of Nicholson (1967) and White and Charry (1966) in that teachers were the primary source of referrals.

Reading Data and the School Psychologist

Reading scores, when they are obtained by school psychologists, are primarily only the results of a general

rapid test like the Wide Range Achievement Test. Remedial-reading data are scarce and spotty in the cases referred. A relatively small percentage of cases were recommended for remedial instruction after the interview. These facts coupled with the facts that such a large percentage of these cases were reading below CAGP, MAGP, or both; such a large percentage were in the K-3 grades and between the ages 6-10 (predominantly reading grades and ages in the school setting); such a relatively small number were below 80 IQ and hence in the mentally retarded range; and that it is not uncommon to find emotional, personality, or behavior problems related to reading retardation, implies that reading data/reading-retardation considerations are not only important factors in the referrals, but that they should be further investigated as a possible tool and aspect of failure that the school psychologist can more profitably use.

It does appear that at least the relationship between the quantity and quality of the reading retardation and the apparent sex, age, grade, and IQ data that school psychologist referrals exhibit should foster a further look into this reading-retardation problem among the school psychologist's referrals.

The direct classroom teacher to school psychologist line of referral which is predominant in the

referrals, and the lack of referrals by the remedial-reading specialist, in the light of our previous discussion, poses the question of the possibility of perhaps utilizing remedial-reading personnel prior to or in conjunction with the school psychologist when the referral process is considered. The ultimate question of whether the school psychologist is receiving referrals that could or should be handled by a remedial-reading specialist before resorting to a referral is indeed one that should be considered closely.

CHAPTER VI

SUMMARY AND CONCLUSIONS

This chapter summarizes the present study, draws conclusions from the research results, and suggests areas for further study.

Summary

This study was concerned with the incidence of reading retardation in the cases referred to school psychologists. The general plan was to survey selected school psychologists in New Jersey, Tennessee, and California to determine the incidence of reading retardation in cases referred to them over a specified period of time (March 22 to May 1, 1971). A questionnaire completed on each case was the basis for determination of reading retardation. The questionnaire also sought to identify these cases according to sex, age, grade, IQ, race, and socioeconomic status. Additional data on prior remedial-reading instruction attendance, the length of that instruction, and referrals from remedial-reading personnel also were obtained.

The 8 school psychologist reporting districts, 6 in New Jersey, 1 in Tennessee, and 1 in California,

reported a total of 96 cases.

Thirty-two of 96 cases (33.3%) referred had reading retardation specifically mentioned in the oral and/or written referral.

Sixty-five of a determinable 79 cases (82%) referred exhibited reading retardation as evidenced by an actual reading level below that of the average for pupils at their chronological age levels (CAGP).

Fifty-seven of a determinable 74 cases (77%) referred exhibited reading retardation as evidenced by an actual reading level below that of the average for pupils at their mental age levels (MAGP).

Fifty-one of a determinable 74 cases (69%) referred exhibited reading retardation by an actual reading level below both CAGP and MAGP.

Eighteen of a determinable 79 cases (23%) referred had previously attended remedial-reading instruction; eight cases specified the length of remedial reading--7 had one year of instruction, and 1 had two years of instruction.

Twenty-two of a determinable 60 cases (37%) referred were further recommended for remedial reading by the school psychologist based on the interview.

Individual characteristic data was also obtained. Boys were referred with twice the incidence of girls. Eighty-three of 96 cases (87%) were 11 years old or below;

69 of the 96 cases (72%) were between ages 7-10. Eighty-one of a determinable 96 cases (84%) referred were in grades K-6; 60 percent were in grades K-3. Eighty-one of a determinable 90 cases (90%) referred were Caucasian. Sixty-three of a determinable 96 cases (66%) referred were in a middle socioeconomic status. Fifty-four of a determinable 77 cases (70%) were in the IQ range 81-120; only 26% were in the IQ range 80 or below.

The main statistical analysis concerned comparisons of proportions of the sexes, grades, ages, races, socioeconomic levels, and IQs within those with reading mentioned in the referral vs. those without reading mentioned, those below/not below CAGP, those below/not below MAGP, and those below/not below both CAGP and MAGP. Statistical significance among the proportions was determined by the use of the chi-square statistic.

Statistical significance was found in the reading mentioned vs. the reading not mentioned group; the proportions of reading mentioned were significantly different in those below CAGP ($p < .05$), those below MAGP ($p < .001$), and those below both CAGP and MAGP ($p < .001$).

Statistical significance was found in those cases below/not below CAGP; the proportion of those below/not below MAGP and those below/not below CAGP and MAGP was significantly different at the .001 level.

Statistical significance was found in those cases below/not below MAGP; the proportion of those cases below/not below was significantly different within the various IQ ranges at the .02 level.

Conclusions

Based on the subject population of this study and its limitations, the following conclusions may be drawn:

1. There is a large incidence of reading retardation, evidenced by an actual reading level below either CAGP, MAGP, or both, among cases referred to school psychologists.

2. Reading is only mentioned in referrals one-third of the time.

3. Boys are referred with twice the incidence of girls; this same ratio holds true for those referred with reading retardation in evidence.

4. The lower grades, K-6, and more specifically K-3, account for the bulk of referrals.

5. The age group 6-11, and more specifically 7-10, accounts for the bulk of referrals.

6. Caucasians were referred with nine times the incidence of non-Caucasians.

7. The middle SES group dominated the referrals.

8. The dull normal/normal IQ ranges dominated the

referrals; only a relatively small percentage of cases were below 80 IQ.

9. Remedial-reading data and specific reading-test data are difficult to obtain and usually not readily available to the school psychologist when referrals are made.

10. The relationship between reading retardation, the reasons for referral, and the determination of a treatment pattern should be further investigated.

Areas for Further Study

1. Since there are no other known studies that have investigated the reading-retardation problem in school psychologist referrals, it would be desirable that more studies of this type be done to attempt to validate this incident rate. It should be noted that attempts should be made to try to secure results from reading tests that are more than quick reading level checks.

2. It is also suggested that a reverse method be used to study those cases referred for remedial-reading instruction to determine how many of these children have been previously referred to school psychologists or have had some type of psychological/psychiatric help. This would further posit or negate the relationship between school psychologist referrals and reading-retardation cases.

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APPENDIX I

QUESTIONNAIRE AND ACCOMPANYING

EXPLANATION SHEET

REFERRAL QUESTIONNAIRE

Date_____

1. SEX: Male ___ Female ___

2. DATE OF BIRTH: _____

3. RACE: Caucasian ____ Negro ____ Other ____

4. SCHOOL GRADE: _____

5. SOCIOECONOMIC STATUS:

Father's or male guardian's occupation _____

Mother's or female guardian's occupation _____

Please guesstimate SES below:

Low (culturally deprived) ____

Low middle (average working class) ____

Upper middle/upper (technician/white collar) ____

6. INTELLIGENCE DATA: (Group or individual test scores)

IQ ____

Test used _____

Date administered _____

Administered by you: Yes _____

No _____

REFERRAL QUESTIONNAIRE (continued)

7. READING DATA: (Please give most recent scores available)

a. Reading grade levels/equivalency for silent reading:

Name of test used (form if given) _____

Date administered _____

Vocabulary _____

Comprehension or Paragraph Meaning _____

Total grade score if given _____

b. Reading grade level/equivalency for oral reading:

Name of test used (form if given) _____

Date administered _____

Oral reading level _____

Administered by you: Yes _____ No _____

8. REFERRAL DATA:

a. Child referred to you by _____

b. Was reading retardation specifically mentioned in the verbal and/or written referral? Yes ___ No ___

c. Has child ever attended remedial reading classes?

Yes ___ No ___ For how long? _____

d. Do you feel child should be referred to remedial reading classes? Yes ___ No __

Why? _____

APPENDIX I (continued)

EXPLANATION SHEET

1. SEX -- self-explanatory
2. DATE OF BIRTH -- self-explanatory
3. RACE -- self-explanatory
4. SCHOOL GRADE -- self-explanatory
5. SOCIOECONOMIC STATUS: Please try to ascertain what parents or guardians do within their respective occupations, e.g., if in the automobile business, is he a salesman, business owner, mechanic, etc. Please also guesstimate SES based on occupational criteria.
6. INTELLIGENCE DATA -- self-explanatory
7. READING DATA: I am requesting grade level/equivalency scores for the silent and oral reading test scores (4.2 = fourth grade, second month); however, if the scores are not recorded in grade levels/equivalency but are recorded in another way, e.g., percentiles, please report this other way. I would rather have a non-grade level/equivalency score than no score reported at all. Silent reading tests generally give two scores, one for vocabulary and one for comprehension (also called paragraph meaning and the like). Also at times it will give an overall total score for silent reading. I am interested in all three, if available. Oral reading tests give one overall score;

EXPLANATION SHEET (continued)

this is my main concern in this area. I am not interested in oral comprehension scores.

The silent reading test scores are of paramount importance in this data collection effort; oral reading scores are desired, but are priority 2 to silent scores. In case you are not familiar with silent vs. oral reading tests in use, I have listed some of the more popular ones below, to help you in your selective reporting:

SILENT READING TESTS	ORAL READING TESTS
Stanford Reading Test	Gray Oral Reading Test
Nelson Reading Test	Gilmore Oral Reading Test
Iowa Silent Reading Test	Fry Oral Paragraphs
California Reading Test	
Metropolitan Reading Test	
Gates-McGinitie Reading Test	

8. REFERRAL DATA -- self-explanatory

ADMINISTRATIVE DATA

I have enclosed questionnaire forms and self-addressed, stamped envelopes. I ask that you return the questionnaires weekly, if not inconvenient for you, so I can begin my tabulation. I will send you forms and envelopes as required. I have numbered the forms to keep track of who is reporting which cases, in case there is a question about one of them. I have also enclosed a small

EXPLANATION SHEET (continued)

form that I request you return to me as soon as you can, so I can see whether or not you will be able to assist me in my study. I can be contacted at any time at the below listed address and telephone number, if you have any questions or need any further information.

Sal Chidichimo
204 Carlton Club Drive
Piscataway, N. J. 08854
Tel. No. 968-7245 (Area code 201)

APPENDIX II

QUESTIONNAIRE SUMMARY DATA

QUESTIONNAIRE SUMMARY DATA

1. SEX: (N = 96)

Male -- 66 (69%) Female -- 30 (31%)

2. AGE: (N = 96)

5-11 years old -- 83 (86.5%)
12-16 years old -- 13 (13.5%)

5-8 years old -- 41 (42.7%)
9-11 years old -- 42 (43.8%)
12-14 years old -- 8 (8.3%)
15-17 years old -- 5 (5.2%)

3. RACE: (N = 90)

Caucasian -- 81 (90%)
Negro -- 5 (5.6%)
Other -- 4 (4.4%)

4. GRADE: (N = 96)

K-3 -- 58 (60.4%)
4-6 -- 23 (24%)
7-9 -- 9 (9.4%)
10-12 -- 0 (0%)
Sp. Ed. -- 6 (6.3%)

5. SOCIOECONOMIC STATUS: (N = 96)

Low -- 12 (12.5%)
Low-middle -- 63 (65.6)
Upper middle/upper -- 21 (21.9%)

6. IQ: (N = 77)

80 or below -- 20 (26%)
81-100 -- 30 (39%)
101-120 -- 24 (31.2%)
Above 120 -- 3 (3.9%)

Mean IQ -- 92.4
Median IQ -- 93

QUESTIONNAIRE SUMMARY DATA (continued)

7. READING RETARDATION:

Below CAGP -- 65 (82%) -- N = 79
Below MAGP -- 57 (77%) -- N = 74
Below Both CAGP and MAGP -- 51 (69%) -- N = 74

Mean amount of reading retardation for those cases below CAGP -- 29.1 months.

Mean amount of reading retardation for those cases below MAGP -- 22.4 months.

8. REFERRAL DATA:

a. Referral Sources: (N = 96)

Reading personnel only accounted for 1 (1.04%) while the classroom teacher accounted for 78 (81.25%).

b. Reading Specifically Mentioned in the Referral: (N = 96)

Yes -- 32 (33.3%) No -- 64 (66.7%)

c. Has Child Attended Remedial Reading: (N = 96)

Yes -- 18 (19%) No -- 61 (63%)

Unknown -- 17 (18%)

d. Does Child Need Remedial Reading: (N = 96)

Yes -- 22 (23%) No -- 38 (40%)

Unknown -- 36 (37%)